THE ROLE OF DEMONSTRATION APPROACHES IN ACQUISITION REFORM

Larry Lynn

The words "acquisition reform" bring to mind the many efforts instituted by Mrs. Colleen Preston, the Deputy Under Secretary of Defense (Acquisition Reform). In addition, the processes preceding formal acquisition require modification as well, and these must be an integral part of acquisition reform. This article outlines the new Advanced Concept Technology Demonstrations and where they fit in the overall acquisition picture.

Modernization of our forces is essential to assure superior capability across the full range of military operations, with minimum casualties and the flexibility for effectiveness against the wide variety of potential threats. That modernization has at least two essential functions: (1) buying new systems or upgrading old ones, to replace that which wears out or becomes obsolete: and (2) introducing new capabilities via upgrades or new systems. Typically these require a different approach for cost-effective introduction into the forces.

- Conventional acquisition generally applies to the first.
- Demonstration, sometimes followed by acquisition but in many cases as an end in itself, applies to the second.

Mr. Lynn is Deputy Under Secretary of Defense (Advanced Technology).

Acquisition reform, as we intend to implement it, must address both functions with an appropriate mix of both approaches.

The formal acquisition process for major systems, directed by DoD Directive 5000.1 and DoD Instruction 5000.2, is the primary mechanism. Historically, it has been the only path for acquisition of new systems and the introduction of new capabilities via new or upgraded systems. There are many recognized problems with this process, ranging from statutory restrictions to practices and mindsets. Major efforts under the leadership of Mrs. Preston are in process to attack these problems.

We must succeed in substantially improving the increasingly expensive and time consuming acquisition process. With budget constraints and increasing needs resulting from the diversity of threats, we cannot afford the inherent inefficiency that has grown into the process. Therefore, the formal major systems process is needed when: (1) buying large, complex weapon systems such as JSTARS, Tactical Missile Defense systems, and major platforms (e.g., aircraft, ships), and (2) for large quantity procurement of items such as trucks, weapons or munitions.

On the other hand, demonstration approaches represented by the newly introduced Advanced Concept Technology Demonstrations (ACTDs), are important as a cost-saving prerequisite to acquiring new capabilities. These "fieldable prototypes," as recommended by the Defense Science Board, are an important alternative to acquisition in many cases.

New capabilities, as opposed to minor improvements or replacements of existing capabilities, are critical because of the changing situations facing our forces. Additionally, the potential for conflicts to be smaller and highly variable may provide a special incentive for small quantities of unique equipment. For the most part, we will have to thing in terms of specialized units rather than force-wide common equipage.

Demonstrations as a prerequisite to acquisition can provide much better upfront definition and user understanding of new concepts or capabilities. In addition, demonstrations provide a basis for development of modified concepts of operation and tactics to make effective use of the new capabilities. Providing the warfighter with a means to develop concepts of operation which exploit the new capabilities also provides a smoother transition from acquisition to operational utility. The ACTDs executed with militarily significant quantities will prepare the forces for rapid incorporation of the new systems.

Undertaking ACTDs prior to committing to acquisition will provide substantial savings in two ways. First, detailed requirements and functional definitions are established *before* invoking the formal systems acquisition process which makes changes very costly (e.g., formal documentation, detailed "illities," logistics definition). Secondly, the basis is provided for sound judgement in tailoring entry into acquisition. In this latter regard, if the concept, design and maturity are well enough understood, in many cases it will be appropriate to enter

acquisition directly at milestones II or IV (or possibly for very simple equipment involving an existing production base, milestone III). In either case, the demonstration approach leverages the fact that historically, 85-90 percent of the eventual life cycle cost of any system is typically determined by the work done during the first percent of expenditure (i.e., during the definition and early development phases).

Demonstrations in themselves are also an important path for introduction of new capabilities. This is likely to apply in two cases:

- Where quantities of only one or a few are required, such as surveillance systems, upper echelon C3 (command, control and communications), specialized systems, and SOF (special operating forces).

- Where the nature of the capability is such that evolutionary upgrading or deployment is preferred. This includes much of information-related systems which (a) are likely to be the focus of many new capabilities, and (b) can only avoid obsolescence by continual improvements.

For these two cases, demonstrations such as ACTDs are intended to provide a residual capability to the operational forces. It will be much more cost effective to enhance these demonstrations as necessary (e.g., improve sustainability) and to replicate them as required. Appropriate logistics must be included in the considerations.

Much of the publicized work in acquisition reform applies both to formal acquisition and to the ACTD approach. This includes statutory revisions, resolution of data rights issues, and the introduction of streamlined management, inspections, audit and reporting. Obviously, both approaches benefit from increased use of commercial components and practices.